

CLAIMS

What is claimed is:

- 1 1. A method of training a neural network, the method comprising:
2 creating a model for a desired function as a multi-dimensional function;
3 determining if the created model fits a simple finite geometry model;
4 generating a Radon transform to fit the simple finite geometry model;
5 feeding the desired function through the Radon transform to generate weights; and
6 training a multilayer perceptron of the neural network using the weights.
- 1 2. The method of claim 1 wherein the neural network is a first neural network and the
2 Radon transform is a second neural network so that the first neural network is trained by
3 the second neural network.
- 1 3. The method of claim 1 wherein the first neural network and the second neural
2 network are dual to each other.
- 1 4. A system for training a neural network, the system comprising:
2 means for creating a model for a desired function as a multi-dimensional function;
3 means for determining if the created model fits a simple finite geometry model;
4 means for generating a Radon transform to fit the simple finite geometry model;
5 means for feeding the desired function through the Radon transform to generate
6 weights; and
7 means for training a multilayer perceptron of the neural network using the weights.
- 1 5. A computer readable medium comprising instructions, which when executed on a
2 processor, perform a method of training a neural network, the method comprising:
3 creating a model for a desired function as a multi-dimensional function;
4 determining if the created model fits a simple finite geometry model;
5 generating a Radon transform to fit the simple finite geometry model;
6 feeding the desired function through the Radon transform to generate weights; and
7 training a multilayer perceptron of the neural network using the weights.

1 6. An apparatus for training a first neural network, the apparatus comprising:
 2 a model generator to create a model for a desired function as a multi-dimensional
 3 function;
 4 a decision module to determine if the created model fits a simple finite geometry
 5 model, the decision module coupled to the model generator;
 6 a Radon transform generator to generate a Radon transform to fit the simple finite
 7 geometry model, the Radon transform generator coupled to the decision module;
 8 a feeder to feed the desired function through the Radon transform to generate
 9 weights, the feeder coupled to the decision module; and
 10 a training module to train a multilayer perceptron of the first neural network using
 11 the weights, the training module coupled to the Radon transform generator.

1 7. The apparatus of claim 6 wherein the Radon transform comprises a second neural
 2 network such that the second neural network is used to train the first neural network.

1 8. The apparatus of claim 7 wherein the first neural network and the second neural
 2 network are dual to each other.